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EXAMINER

ROMAN, LUIS ENRIQUE

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,753

Applicant(s)

SIEBENTHALL ET AL.

Examiner

Luis Roman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/09/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

Claim 3 recites the limitation “**said second filter comprises...**”. There is insufficient antecedent basis for this limitation in the claim.

In order to further examine claim 3, it will be considered as dependent on claim 2.
Appropriate correction is required.

Claim 4 recites the limitation “**... including a third filter...**”. Claim 1 only has a first filter, there is no a second filter.

In order to further examine claim 4, it will be considered as dependent on claim 2.
Moreover, this claim ends in “**...terminal; and**”.

In order to further examine this claim, it will be considered ended in “**...terminal.**”.
Appropriate correction is required.

Claim 25 recites the limitation “**... filtering with a third filter...**”. Claim 22 only has a first filter, there is no a second filter.

In order to further examine claim 25, it will be considered as dependent on claim 24.
Moreover, this claim ends in “**...terminal; and**”.

In order to further examine this claim, it will be considered ended in “**...terminal.**”.
Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6, 8, 9, 10, 16, 22, 23, 27, 29, 30, 31 & 37 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Kane (US 4614925).

Regarding claims 1 & 22 Zushi discloses an electromagnetic interference filtering apparatus/method (a person of the ordinary skill will understand a method that is intrinsically described by the functioning of the apparatus) comprising: a first filter (Fig. 7 element 24') with a first end and a second end, said first end is operably connected in series with said first power input terminal (Fig. 7 elements 2 and left side of 4) said second end is operably connected to a first output terminal (Fig. 7 elements 19 and right side of 5<thru the series path>), and an impedance comprising an inductance in series with said filter, said impedance also including a capacitance connected to a ground (Fig. 7 elements 4, 5, 7) wherein said impedance is configured to facilitate matching of an input impedance of the filtering apparatus with that of a voltage source and said inductance and capacitance cooperate to provide filtering of electromagnetic interference (Col. 7 lines 18-25, the purpose of this matching circuit it is to match impedances of the source with the line and also to filter high frequencies).

Zushi does not disclose a first conductor on a first layer of a circuit card forming a distributed inductance in series with said filter, said impedance also including a second conductor on a second layer of said circuit card operably connected to a ground.

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Kane teaches a first conductor on a first layer of a circuit card forming a distributed inductance in series with said filter, said impedance also including a second conductor on a second layer of said circuit card operably connected to a ground (Col. 11 lines 35-39 & Fig. 16(a) <this figure shows the distributed inductance and capacitance, impedance, on a dielectric substrate>).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi device with the Kane device features because two issues are addressed: a) improvement of the efficiency in the circuit by adjusting the impedance of the network with the source impedance (no reflection is produced); b) optimization of space used by utilizing a circuit card.

Regarding claims 2/23 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Zushi further discloses a second filter operably connected to a first power input terminal and a ground (Fig. 7 element 14).

Regarding claims 6/27 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Zushi further discloses including a fourth filter (Fig. 7 element 29').

Regarding claims 8/29 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Kane further discloses including at least one of: a first bus bar operably connected to said first power input terminal and said circuit card; and a second bus bar operably connected to said second power input terminal and said circuit card; said first bus bar and said second bus bar comprising a preformed conductor (Col. 17 lines 23-30 & Fig. 36 elements 98,101).

Regarding claims 9/30 Zushi in view of Kane discloses the apparatus/method of claims 8/29.

Kane further discloses wherein said first and second bus bars are configured to conduct current from an input connector to said circuit card, said first and said second bus bars including a flat portion to facilitate conduction with a conductor of said circuit card (Fig. 36 elements 98,101).

Regarding claims 10/31 Zushi in view of Kane discloses the apparatus/method of claims 8/29.

Kane further discloses wherein said first and second bus bars are configured to substantially eliminate strain exerted on said circuit card (Fig. 36 elements 98,101<It is implicitly disclosed since a mechanical stronger connection is needed between the printed circuit board and the external devices connected to it in order not to damage it when connecting/disconnecting>).

Regarding claims 16/37 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Zushi further discloses wherein said first and second power terminal corresponding to a voltage source and a ground reference (Fig. 7 elements 1, 2, ground).

Claims 3, 7, 24 & 28 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Kane (US 4614925) and Roberts, Jr. et al. (US 6661634).

Regarding claims 3/24 Zushi in view of Kane discloses the apparatus/method of claims 2/22.

Zushi in view of Kane does not disclose wherein said second filter comprises a first capacitor and a second capacitor, each capacitor with a first end and a second end, wherein said first end of said first capacitor is operably connected to said first power input terminal and said second end is operably connected to a ground and wherein said

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first end of said second capacitor is operably connected to said second power input terminal and said second end is operably connected to said ground.

Roberts, Jr. et al. teaches wherein said second filter comprises a first capacitor and a second capacitor, each capacitor with a first end and a second end, wherein said first end of said first capacitor is operably connected to said first power input terminal and said second end is operably connected to a ground and wherein said first end of said second capacitor is operably connected to said second power input terminal and said second end is operably connected to said ground (Fig. 1 element 120).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Roberts, Jr. et al. device features because this capacitors will act like shorts to ground for a high frequency voltage as a result they will help to filter any surge in the apparatus.

Regarding claims 7/28 Zushi in view of Kane discloses the apparatus/method of claim 6/27.

Zushi in view of Kane does not disclose wherein said fourth filter comprises a fourth capacitor and a fifth capacitor, each capacitor with a first end and a second end, wherein said first end of said fourth capacitor is operably connected to said first output terminal and said second end is operably connected to a ground and wherein said first end of said fifth capacitor is operably connected to said second output terminal and said second end is operably connected to a ground.

Roberts, Jr. et al. teaches wherein a filter comprises a first capacitor and a second capacitor, each capacitor with a first end and a second end, wherein said first end of said first capacitor is operably connected to said first power input terminal and said second end is operably connected to a ground and wherein said first end of said second capacitor is operably connected to said second power input terminal and said second end is operably connected to said ground (Fig. 1 element 120).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Roberts, Jr. et al. device features because this capacitors will act like shorts to ground for a high frequency

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voltage as a result they will help to filter any surge in the apparatus. Moreover, it has been held that mere duplication of the essential working parts of a device involves only routine skills in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claims 4, 5, 17, 25, 26 & 38 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Kane (US 4614925) and Havot et al. (US 5121078).

Regarding claims 4/25 Zushi in view of Kane discloses the apparatus/method of claims 2/24.

Zushi in view of Kane does not disclose a third filter with a first end and a second end, said first end is operably connected in series with said second power input terminal and said second end is operably connected to a second output terminal.

Havot et al. teaches wherein a filter with a first end and a second end, said first end is operably connected in series with said first power input terminal and said second end is operably connected to a first output terminal (Col. 1 lines 28-41 & Fig. 1 element C). It is implicitly disclosed that in a symmetric circuit the capacitor may be connected in series to the first power input terminal path/first output terminal and/or in series to the second power input terminal path/second output terminal).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Havot et al. device features because this capacitor will attenuate/filter a desired range of high frequencies depending on the values chosen for the components.

Regarding claims 5/26 Zushi in view of Kane and Havot et al. discloses the apparatus/method of claim 4/25.

Zushi further discloses including another impedance comprising an inductance in series with said third filter, said another impedance also including a capacitance operably connected to a ground (Fig. 7 elements 12, 13, 14), wherein said impedance is configured to facilitate matching of an input impedance of the filtering apparatus with

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that of a voltage source and said inductance and capacitance cooperate to provide filtering of electromagnetic interference (Col. 7 lines 18-25, the purpose of this matching circuit it is to match impedances of the source with the line and also to filter high frequencies).

Zushi in view of Kane and Havot et al. does not disclose a third conductor on a first layer of a circuit card forming a distributed inductance in series with said filter, said impedance also including a fourth conductor on a second layer of said circuit card operably connected to a ground.

Kane teaches a first conductor on a first layer of a circuit card forming a distributed inductance in series with said filter, said impedance also including a second conductor on a second layer of said circuit card operably connected to a ground (Col. 11 lines 35-39 & Fig. 16(a) <this figure shows the distributed inductance and capacitance, impedance, on a dielectric substrate>).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane and Havot et al. device with the third and fourth conductor since it has been held that mere duplication of the essential working parts of a device involves only routine skills in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claims 17/38 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Zushi in view of Kane does not disclose wherein said first filter comprises an inductance and capacitance operably connected in parallel.

Havot et al. teaches wherein said first filter comprises an inductance and capacitance operably connected in parallel (Fig. 1 elements L, C).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Havot et al. device features because this capacitance in parallel with the inductance produces an attenuation at a frequency determined by the values of the capacitor and the inductor.

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Claims 11 & 32 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Kane (US 4614925) and Brandeau (US 4750266).

Regarding claims 11/32 Zushi in view of Kane discloses the apparatus/method of claims 8/29.

Zushi in view of Kane does not disclose wherein said first and second bus bars are configured to facilitate matching of an input impedance of the filtering apparatus with that of a voltage source.

Brandeau teaches wherein said first and second bus bars are configured to facilitate matching of an input impedance of the filtering apparatus with that of a voltage source (Col. 1 lines 12-29<it is obvious that the flat wire may be a metal bar, as both are conductors>).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Brandeau device because the matching of impedances will prevent from distortion, attenuation and cross-talk of the low power electronic signals traveling along the cable/bar/bus.

Claims 12 & 33 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Kane (US 4614925) and Shimada et al. (US 6020867).

Regarding claims 12/33 Zushi in view of Kane discloses the apparatus/method of claims 8/30.

Zushi in view of Kane does not disclose wherein said first and second bus bars are configured to eliminate cable to connector crimp connections to reduce power dissipation and heat generation.

Shimada et al. teaches wherein said first and second bus bars are configured to eliminate cable to connector crimp connections to reduce power dissipation and heat generation (Col. 73 lines 54-67).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Shimada et al. device because it minimizes an adverse thermal effect, such as heat distortion.

Claims 13, 14, 18, 19, 34, 35 & 39 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Kane (US 4614925) and Stahl (US 5388021).

Regarding claims 13/34 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Zushi in view of Kane does not disclose further including a first and a second of transient absorption devices each transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first power input terminal and said second end is operably connected to a chassis ground and wherein said first end of said second transient absorption device is operably connected to said second power input terminal and said second end is operably connected to said chassis ground.

Stahl teaches including a first and a second of transient absorption devices each transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first power input terminal (Fig. 13 elements 28<left>, 11, 15) and said second end is operably connected to a chassis ground (Fig. 13 elements 28<left>, ground) and wherein said first end of said second transient absorption device is operably connected to said second power input terminal (Fig. 13 elements 28<right>, 12, 15) and said second end is operably connected to said chassis ground (Fig. 13 elements 28<right>, ground).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Stahl device because it provides voltage surge and transient suppressor using clusters of metal oxide varistors which represents a device light in weight and compact in size.

Regarding claims 14/35 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Zushi in view of Kane does not disclose further including a transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first power terminal and said second end is operably connected to said second power terminal.

Stahl teaches a transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first power terminal and said second end is operably connected to said second power terminal (Fig. 13 elements 42, 11, 12, 15).

Regarding claims 18/39 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Zushi in view of Kane does not disclose further including a third and a fourth transient absorption device each transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first output terminal and said second end is operably connected to a chassis ground and wherein said first end of said second transient absorption device is operably connected to said second output terminal and said second end is operably connected to said chassis ground.

Stahl teaches further including a third and a fourth transient absorption device each transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first output terminal (Fig. 13 elements 29<right>, 13) and said second end is operably connected to a chassis ground (Fig. 13 elements 29<right>, ground) and wherein said first end of said second transient absorption device is operably connected to said second output terminal (Fig. 13 elements 29<left>, 14) and said second end is operably connected to said chassis ground (Fig. 13 elements 29<left>, ground).

Regarding claim 19 Zushi in view of Kane discloses the apparatus of claim 1. Zushi in view of Kane does not disclose further including another transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first output terminal and said second end operably connected to said second output terminal.

Stahl teaches further including another transient absorption device with a first end and a second end, wherein said first end of said first transient absorption device is operably connected to said first output terminal and said second end operably connected to said second output terminal (Fig. 13 elements 32, 13, 14).

Claim 21 is rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Roberts, Jr. et al. (US 6661634).

Regarding claim 21 Zushi discloses the apparatus of claim 1.

Zushi does not disclose further including a connector in operable communication with said first power input terminal.

Roberts, Jr. et al. teaches a connector in operable communication with said first power input terminal (Fig. 2 elements 95, 90).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi device with the Roberts, Jr. et al. device because it provides a way of connecting/disconnecting the device from the power input terminal as required.

Claims 15 & 36 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Kane (US 4614925) and Bender (US 6926288).

Regarding claims 15/36 Zushi in view of Kane discloses the apparatus/method of claims 1/22.

Zushi in view of Kane does not disclose further including a first and a second resistor-capacitor filter comprising a series combination of a resistor and a capacitor, each

resistor-capacitor filter with a first end and a second end, wherein said first end of said first resistor-capacitor filter is operably connected to said first power input terminal and said second end is operably connected to a chassis ground and wherein said first end of said second resistor-capacitor filter is operably connected to said second power input terminal and said second end is operably connected to a chassis ground.

Bender teaches a resistor-capacitor filter comprising a series combination of a resistor and a capacitor, said resistor-capacitor filter with a first end and a second end, wherein said resistor-capacitor filter is operably connected to said first power input terminal and said second end is operably connected to a chassis ground (Col. 8 lines 56-59 & Fig. 4(b) elements R, C).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Bender device because the dampening mechanism can serially connect a resistance to a decoupling capacitance to protect the device and reduce the conducted and radiated EMI emissions.

Moreover, Bender discloses the claimed limitation except for the second resistor-capacitor filter. It would have been obvious to one having ordinary skills in the art at the time the invention was made to add a second resistor-capacitor filter to the negative terminal of the source due to symmetry of the device, since it has been held that mere duplication of the essential working parts of a device involves only routine skills in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claim 20 is rejected under 35 U.S.C. §103(a) as being unpatentable over Zushi (US 5051706) in view of Kane (US 4614925) and Knigge et al. (US 6639779).

Regarding claim 20 Zushi in view of Kane discloses the apparatus of claim 1.

Zushi in view of Kane does not further disclose including a first and a second positive temperature coefficient device, each positive temperature coefficient device with a first end and a second end, wherein said first end of said first positive temperature coefficient device is operably connected to said first output terminal and said second

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end is operably connected to a load and wherein said first end of said second positive temperature coefficient device is operably connected to said second output terminal and said second end operably connected to said load.

Knigge et al. teaches including a first and a second positive temperature coefficient device, each positive temperature coefficient device with a first end and a second end, wherein said first end of said first positive temperature coefficient device is operably connected to said first output terminal and said second end is operably connected to a load and wherein said first end of said second positive temperature coefficient device is operably connected to said second output terminal and said second end operably connected to said load (Fig. 5A elements R2, R3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Zushi in view of Kane device with the Knigge et al. device because this devices will protect the filter from excessive heat which may produce a malfunction or damage to the device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272 – 5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

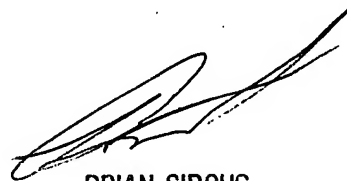
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

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LR/042706

Luis E. Román
Patent Examiner
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